REMARKS

Claims 1-12 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 3-5 and 10-12 to fix minor informalities. The amendments to claims 3-5 and 10-12 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents.

Applicant thanks the Examiner for allowing claims 8 and 9, and for indicating that claims 3-5 and 10-12 contain allowable subject matter. The Examiner, however, rejected claims 5 and 10-12 under 35 U.S.C. § 112, second paragraph and claims 1, 6, and 7 under 35 U.S.C. § 102(b).

First, claims 5 and 10-12 stand rejected under 35 U.S.C. § 112, second paragraph. Applicant thanks the Examiner for pointing out, with particularity, the aspects of the claims thought to be indefinite. Applicant respectfully requests the Examiner to withdraw this rejection in view of the self-explanatory claim amendments being made herein.

The Examiner also rejected claims 1, 6, and 7 under 35 U.S.C. § 102(b) as being anticipated by a newly found reference, U.S. Patent No. 5,825,640 to Quigley et al. (hereinafter "Quigley"). Applicant respectfully traverses this rejection and respectfully requests the Examiner to reconsider this rejection in view of the comments, which follow.

Of these rejected claims, only claim 1 is independent. Claim 1 requires: "at least a cascode transistor for limiting the variation of the voltage of said drain node, wherein an intermediate switch transistor is placed between the drain node and the cascode transistor." The

Examiner asserts that claim 1 is directed to a charge pump and is anticipated by Quigley. In particular, the Examiner asserts that Quigley's transistor 33 and transistor 37 are equivalent to a cascode transistor and an intermediate switch transistor, respectively, as set forth in claim 1 (see page 3 of the Office Action). Applicant respectfully disagrees. Applicant has carefully studied Quigley's charge pump with transistors 33 and 37, which are not similar to a cascode transistor and an intermediate switch transistor, respectively.

Quigley teaches transistors 32 and 35 that operate as switches in response to V.sub.PU and V.sub.PD, respectively, to enable I.sub.p current pulses through transistors 33 and 34 to output 31. Transistors 32 and 35 have nearly zero volts from drain to source when switched on. Initially, at time T.sub.0, V.sub.PU and V.sub.PD are inactive and I.sub.p is zero. At time T.sub.1, V.sub.PU is activated to turn on the transistor 32 and produce an I.sub.p pulse. At time T.sub.2, V.sub.PU terminates and the transistors 32 and 33 are switched off, restoring I.sub.p to zero current. Similarly, at time T.sub.4, V.sub.PD is active, switching on the transistors 34 and 35 to produce I.sub.p having a negative magnitude. At time T.sub.5, V.sub.PD terminates and the transistors 34 and 35 are switched off, again restoring I.sub.p to zero current. Nodes 38 and 39 are switching nodes whose parasitic capacitance are charged through the switching transistors 32 and 35, respectively, which are enabled at the leading edge of V.sub.PU to provide a low impedance charging path.

Moreover, Quigley teaches a transistor 37 operating as a charge conduction path which alters the stored charge on the node 38 by routing the charge through a transistor 37 to a discharge node, *i.e.*, ground, in response to V.sub.PPULSE. Similarly, the transistor 36 operates

as a charge conduction path to alter the stored charge on the node 39 by routing the charge through transistor 36 to a discharge node, *i.e.*, V.sub.DD, in response to V.sub.NPULSE (Figs. 3 and 4; col. 4, lines 35 to 56).

In Quigley, however, the transistor 33, alleged cascode transistor, acts as a current source. In other words, Qugley's transistor 33 supplies charging current. In Quigley, the transistor 33 is not a cascode transistor. The transistor 33 does not increase the output resistance of the charge pump in an electronic way. In short, Quigley fails to teach or suggest a cascode transistor for limiting the variation of the voltage of the drain node.

In addition, Quigley's transistor 37, alleged intermediate switch transistor, operates as a charge conduction path to discharge a node on the trailing edge of the detection pulse, while disabling the charge conduction path to isolate the switching node from the discharge node at the leading edge. In other words, Quigley has a switching transistor 32 that switches a current source transistor 33 on and off. The switch transistor 32, however, is not positioned between the drain node and the transistor 33. Transistor 37 is only used to discharge the node 38 when the switching transistor 32 is off. As a result, when the switch transistor 32 is off (during discharge), a spurious voltage occurs due to the discharging operation.

That is, Quigley does not teach or suggest having an intermediate switch transistor placed between the drain node and a cascode node. Consequently, Quigley's pump charge cannot decrease the spurious output current at the transition of the control signal. In short, Quigley's transistor 37 is used for discharging the node and the switch 32 is not positioned between the drain node and the transistor 33.

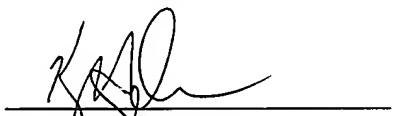
Therefore, "at least a cascode transistor for limiting the variation of the voltage of said drain node, wherein an intermediate switch transistor is placed between the drain node and the cascode transistor," is not suggested or taught by Quigley, which lacks having a cascode transistor and an intermediate switch transistor between the drain node and the cascode transistor. For at least these exemplary reasons, Applicant respectfully submits that independent claim 1 is patentably distinguishable from Quigley. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of claim 1. Claims 6 and 7 are patentable at least by virtue of their dependency.

With respect to claim 2, the Examiner failed to indicate the status of claim 2. Applicant respectfully submits that claim 2 is patentable at least by virtue of its dependency.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Kelly G. Hyndman
Registration No. 39,234

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

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